

APPENDIX F
Report of Findings, Preliminary Investigation Demolition Support Services
TRC, 1998 (without Attachments)



April 15, 1998

Project No. 97-734

Mr. Larry L. Lake
Environmental Site Coordinator
Georgia-Pacific Corporation
90 West Redwood Avenue
Fort Bragg, California 95437

Report of Findings
Preliminary Investigation
Demolition Support Services
Georgia-Pacific Fort Bragg Facility
Fort Bragg, California

Dear Mr. Lake:

Pursuant to our proposal to provide Demolition Support Services, dated November 24, 1997 (Proposal), TRC is providing this Report of Findings for the recently completed Preliminary Investigation at the Georgia-Pacific Sawmill located at 90 Redwood Avenue in Fort Bragg, California (Site). The Preliminary Investigation activities were conducted on behalf of Georgia-Pacific Corporation (G-P) during January 20-22, 1998 to evaluate coatings (paint) on selected buildings, and to determine if contaminants associated with prior Site operations are present in subsurface soils in areas scheduled for demolition.

It is our understanding that the demolition contractor has already been selected by G-P. The objectives of the Preliminary Investigation were limited to the following:

- Determination of lead content in painted coatings of buildings slated for demolition.
- Determination of the nature of chemical impacts, if any, to subsurface soils beneath buildings slated for demolition.

Preliminary Investigation activities focused on areas scheduled for demolition and included a lead-based paint survey and the collection of 48 soil samples from the Site. Selected painted Site structures to be demolished were tested for the presence of lead using a portable X-ray Fluorescence Analyzer (XRF). Soil samples were collected from selected locations in the demolition areas (e.g., beneath building floors) based on consideration of prior Site operations. Soil samples were analyzed at a state-certified laboratory for some or all of the chemical constituents listed below. In accordance with G-P requirements, laboratory analytical services were contracted directly by G-P with Alpha Analytical Laboratories, Inc. in Ukiah, California.

- Total Petroleum Hydrocarbons as Diesel (TPH/D) by EPA Method 8015M
- TPH as Motor Oil (TPH/MO) by EPA Method 8015M
- Polychlorinated Biphenyls (PCBs) by EPA Method 8080
- Volatile Organic Compounds (VOCs) by EPA Method 8260B.

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A summary of field activities and associated findings is provided below for the lead-based paint survey and the soil sampling investigation.

1.0 LEAD-BASED PAINT SURVEY

1. In accordance with the procedures outlined in the Proposal, a certified lead inspector/risk assessor from The Szaras Companies (TSC) conducted an inspection of the following five selected Site facilities to identify the presence of lead-based paint:
 - Sawmill Building
 - Lath Plant Building
 - Old Debarker
 - Planing Mill No. 1
 - Planing Mill No. 50.
2. The testing procedure involved the automated averaging of three scans of each painted structure using the XRF. Details of the testing method are outlined in the TSC Report, a copy of which is included in Attachment A to this Report of Findings.
3. Although no federal, state or local regulatory standards have been promulgated which stipulate a threshold concentration of lead in intact paint, a commonly used reference value recommended by the U.S. Department of Housing and Urban Development (HUD) has been adopted for guidance. The HUD threshold of 1.0 mg/cm² is applicable to federally owned or subsidized housing and is typically used to determine if remedial actions are appropriate at private residential and/or industrial facilities.
4. The primary findings of the TSC report indicate that painted areas with lead levels exceeding the HUD guideline account for a small percentage (less than 10%) of the overall painted areas in the buildings. According to the TSC Report, "A majority of paint found to contain lead above the HUD guideline limits is in poor or unsatisfactory condition..." A summary of results for the selected painted surfaces tested at each of the five facilities is provided below:
 - Sawmill: Yellow (13 out of 44), red (4 out of 14), white (3 out of 72) and gray (3 out of 6) painted surfaces were found to have elevated levels of lead (i.e., exceeding 1 mg/cm²). Peak levels up to 19.029 mg/cm² were reported. Surfaces painted with green (43), blue (15) and tan (12) paint had lead levels below the HUD threshold.
 - Lath Plant: None of the 40 painted surfaces tested was found to have elevated levels of lead.

- Old Debarker: Some of the yellow painted surfaces (4 out of 7) were found to have elevated levels of lead. Peak levels up to 9.280 mg/cm² were reported. Surfaces painted with green (3), red (3), white (9), blue (7) and tan (6) paint had lead levels below the HUD threshold.
 - Planing Mill No. 1: Yellow (14 out of 21), red (5 out of 11), and orange (3 out of 5) painted surfaces were found to have elevated levels of lead. Peak levels up to 10.766 mg/cm² were reported. Surfaces painted with white (17), green (6), blue (6) and tan (12) paint had lead levels below the HUD threshold.
 - Planing Mill No. 50: Yellow (2 out of 8), red (4 out of 8) and orange (4 out of 4) painted surfaces were found to have elevated levels of lead. Peak levels up to 6.369 mg/cm² were reported. Surfaces painted with white (17), green (11), blue (7), gray (3) and tan (27) paint had lead levels below the HUD threshold.
5. As recommended in the TSC Report, painted surfaces in poor or unsatisfactory condition should be removed from the identified structures and analyzed to determine appropriate waste classification and disposal options. Since the majority of painted surfaces were found to have lead levels below the HUD guideline, paint chips and debris generated during building demolition are not likely to contain hazardous levels of lead.

2.0 SOIL SAMPLING INVESTIGATION

1. Soil samples were collected from borings advanced in 24 selected locations at the Site based on a review of prior Site operations and access considerations. A limited access rig was used given the restricted access within existing buildings. Boring locations were selected by G-P and TRC personnel based on knowledge of prior operations in each facility and access considerations for the drill rig. The approximate location of each boring (i.e., soil sample) was determined in the field using standard tape survey methods (Figure 1). As appropriate, reference points used to determine distances to each boring included building corners and other building features which were likely to be easily located following demolition of walls and roof structures.

2. Two samples were collected from each boring: A surface sample (A) at a nominal depth of 0.5 feet below ground surface (bgs)⁽¹⁾, and a subsurface sample (B) collected from a depth of approximately 2.5 to 3.0 feet bgs. Samples were collected by driving a split-spoon sampler (lined with two 2-inch by 6-inch brass sleeves) to the desired depth using a 140-pound hammer. Within building structures (i.e., Planing Mills No. 1, 50; and the Sawmill Building), the sampler was driven to the desired sampling depth following the preliminary drilling through a 3- to 6-inch thick concrete or asphalt cover.
3. Following removal of the soil from the brass sampling tube and visual observation of the sample, the soil was placed in a glass jar, labeled according to location, and stored in an ice chest cooled to approximately 4 °C. Samples were transmitted to a state-certified laboratory for analysis under appropriate Chain-of-Custody protocol.
4. Soil samples collected during the Preliminary Investigation were analyzed for the above listed constituents by Alpha Analytical Laboratories, Inc., a state-certified laboratory, according to applicable EPA methods. A copy of the laboratory report for these analyses is included in Attachment B to this Report of Findings. Tabulated summaries of reported analytical results for the 48 soil samples (i.e., 24 near surface and 24 subsurface samples) collected during the Preliminary Investigation are provided in Figure 1.
5. In an effort to determine the leaching potential of reported TPH in Site soil, soluble fractions were extracted from two soil samples with reportedly elevated levels of TPH/D and TPH/MO (SM-12B/2.5 & P1-2A/0.5). The extracts were obtained by the Threshold Contaminant Leaching Procedure (TCLP) using deionized (DI) water as an extraction solvent. The extracts were analyzed for TPH/D and TPH/MO by EPA Method 8015M.

3.0 EVALUATION OF RESULTS

1. No detectable levels of PCBs were reported in soil samples analyzed by EPA Method 8080. As indicated in Figure 1, detectable levels of TPH as diesel and/or as motor oil (TPH/D, TPH/MO) were reported in all but five of the soil samples collected from the Site. The

⁽¹⁾ Ground surface is defined at each location as the top of exposed soil; since most borings required initially drilling through approximately 3 to 6 inches of concrete or asphalt, surface samples were typically collected from the exposed soil within 6 inches below the bottom of the concrete/asphalt.

following soil samples were reported to contain levels of TPH/D or TPH/MO in excess of 500 mg/kg or 1,000 mg/kg, respectively, as indicated in Figure 1:

SAMPLE ID	DEPTH (ft)	TPH/D (mg/kg)	TPH/MO (mg/kg)	COMMENTS
SM-1B/2.5	2.5	160	1,000	East area of Sawmill Bldg
SM-2B/2.5	2.5	3,400	7,200	East area of Sawmill Bldg
SM-3A/0.5	0.5	850	5,500	East area of Sawmill Bldg
SM-4A/0.5	0.5	300	1,400	East area of Sawmill Bldg
SM-10B/2.5	2.5	780	3,000	Southwest end of Sawmill Bldg
SM-12A/0.5	0.5	160	1,100	Southwest end of Sawmill Bldg
SM-12B/2.5	2.5	4,200	16,000	Southwest end of Sawmill Bldg; Soluble fraction had 2.3 mg/L and 9.1 mg/L of TPH/D and TPH/MO, respectively
GC-1A/0.5	0.5	330	1,600	North end of Existing Green Chain Structure
P1-1A/0.5	0.5	610	1,600	Southwest corner of Planer No. 1
P1-2A/0.5	0.5	500	2,900	South area of Planer No. 1; Soluble fraction had < 0.05 mg/L and 0.23 mg/L of TPH/D and TPH/MO, respectively
P1-2B/2.5	2.5	220	1,200	South area of Planer No. 1
P1-3A/0.5	0.5	160	2,400	South-central area of Planer No. 1

- Results of leachability tests indicate that elevated levels of petroleum hydrocarbons could leach from soil into surface water (e.g., rainfall), but the magnitude of leaching is likely to be minimal (i.e., less than 0.06% based on comparison between reported concentrations in leachate versus levels in soil matrix). The potential level of leached petroleum hydrocarbons could, however, be sufficient to produce a noticeable sheen on the affected water's surface.
- Access considerations limited the number and location of soil samples collected from the eastern portion of the Sawmill Building. This area had been identified as an area of specific interest based on a review of historic Site operations in the Sawmill Building. The area had been used for industrial operations prior to construction of the sawmill building and placement of the concrete flooring; local soils may have therefore been impacted by prior operations. Elevated concentrations of petroleum hydrocarbons reported for soil samples collected from Borings SM-1 through SM-4 in this area are consistent with the initial identification of this area of interest.

4. Boring SM-12 was the only boring collected from areas adjacent to and outside the Sawmill Building. Since this area is not beneath a protective floor cover, additional sampling may be warranted to determine the extent of observed impacts to the soil, and to accurately assess the potential for stormwater impacts in this uncovered area.
5. Due to access limitations, it was not possible to sample soils in the immediate vicinity of the former dip tank in Planing Mill No. 1 (e.g., for VOCs). If access considerations can be resolved (e.g., by removal of one or more walls in this portion of the building), it may be useful to collect soil samples from this area of interest.
6. The indicated results for samples collected from Borings P1-2 through P1-4 in the southern portion of Planing Mill No. 1 may be consistent with the use of hydraulic oils in this area; a number of equipment footings were reportedly situated in this area along the eastern edge of the building. Further sampling of the Planing Mill No. 1 may be necessary before disturbing the floor.
7. Access considerations precluded the collection of soil samples from beneath the existing Green Chain structure. Following demolition of this structure, it may be useful to collect soil samples from this area to more definitively determine if the underlying soil has been impacted by previous operation of the Green Chain.

4.0 RECOMMENDATIONS

1. The following recommendations are offered for further evaluation of areas and facilities to be demolished at the Site:
 - Painted surfaces with lead above the HUD guideline that are in poor or unsatisfactory condition should be removed from the identified structures and analyzed to determine appropriate waste classification and disposal options. Appropriate health and safety measures should be established and implemented during the removal of lead-impacted painted surfaces. A lead abatement contractor can be retained for this aspect of the demolition.
 - Existing flooring in each of the identified structures should be maintained intact and sealed to minimize the potential for leaching of hydrocarbons by surface infiltration following demolition of roofing and walls.
 - In the event G-P decides to remove or disturb the sealed flooring areas, additional sampling of selected areas should be conducted to further

Mr. Larry L. Lake
April 1, 1998
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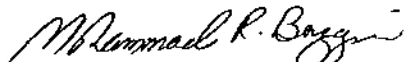
delineate the extent of soil contamination and evaluate remediation alternatives. Specific areas of interest include:

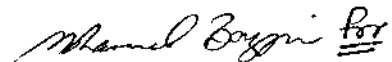
- Former dip tank in Planing Mill No. 1
- Eastern portion of Sawmill
- Western exterior of Sawmill (i.e., near Boring SM-12)
- Soils beneath Green Chain structure
- Areas in the vicinity of former equipment footings in Planing Mill No. 1.

2. Exposed surface areas with visible soil staining should be removed and remediated onsite. TRC can assist in the excavation and remediation of impacted soils.

If you have any questions regarding these findings, please call.

Sincerely,

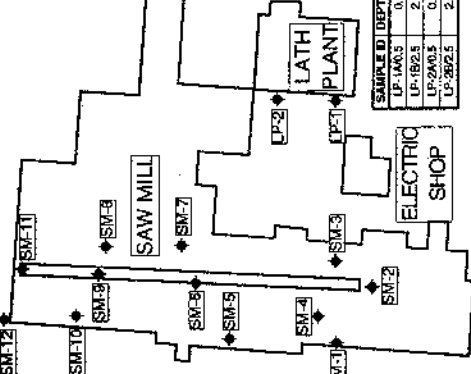

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Attachments

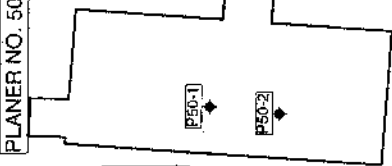
cc: Roger Sherwood, Georgia-Pacific Corporation
Miro Knezevic, TRC
Deems Padgett, TRC

SAMPLE ID	DEPTH (ft)	PCBs	TPHMO
SM-1A0.5	0.5	NT	140.0
SM-1B2.5	2.5	NT	190.0
SM-2A0.5	0.5	NT	190.0
SM-2B2.5	2.5	<0.2	3,400.0
SM-3A0.5	0.5	<2	850.0
SM-3B2.5	2.5	<2	310.0
SM-4A0.5	0.5	NT	300.0
SM-4B2.5	2.5	<0.2	3.0
SM-5A0.5	0.5	NT	7.0
SM-5B2.5	2.5	<0.2	21
SM-6A0.5	0.5	<0.2	3.2
SM-6B2.5	2.5	NT	47.0
SM-7A0.5	0.5	NT	3.2
SM-7B2.5	2.5	<0.2	6.5
SM-8A0.5	0.5	NT	88.0
SM-8B2.5	2.5	<0.2	240.0
SM-9A0.5	0.5	NT	250
SM-9B2.5	2.5	NT	700.0
SM-10A0.5	0.5	NT	21.0
SM-10B2.5	2.5	<0.2	1.0
SM-11A0.5	0.5	NT	190.0
SM-11B2.5	2.5	NT	4,200.0



SAMPLE ID	DEPTH (ft)	PCBs	TPHMO
LP-1A0.5	0.5	NT	160
LP-1B2.5	2.5	<0.2	<1
LP-2A0.5	0.5	NT	80.0
LP-2B2.5	2.5	NT	<1

SAMPLE ID	DEPTH (ft)	PCBs	TPHMO
P50-1A0.5	0.5	NT	25.0
P50-1B2.5	2.5	NT	27.0
P50-2A0.5	0.5	NT	81.0
P50-2B2.5	2.5	<0.2	71.0



SAMPLE ID	DEPTH (ft)	PCBs	TPHMO
P1-1A0.5	0.5	NT	510.0
P1-1B2.5	2.5	<0.2	3.9
P1-2A0.5	0.5	NT	500.0
P1-2B2.5	2.5	<0.2	220.0
P1-3A0.5	0.5	NT	160.0
P1-3B2.5	2.5	NT	6.2
P1-4A0.5	0.5	NT	<0
P1-4B2.5	2.5	NT	2.0
P1-5A0.5	0.5	NT	<1
P1-5B2.5	2.5	NT	3.8
P1-6A0.5	0.5	NT	<0.2
P1-6B2.5	2.5	<0.2	<1



SAMPLE ID	DEPTH (ft)	PCBs	TPHMO
SC-1A0.5	0.5	NT	300.0
SC-1B2.5	2.5	NT	1.2
SC-2A0.5	0.5	NT	54.0
SC-2B2.5	2.5	<0.2	6.0



LEGEND
 ◆ SM-3 Soil Boring

NOTES:
 1. Analytical results indicated in mg/kg.
 2. NT: Not Tested
 3. PCB: Polychlorinated Biphenyls (EPA Method 8080)
 4. TPHMO: Total Petroleum Hydrocarbons - Diesel (EPA Method 8015M)
 5. TPHMO: Total Petroleum Hydrocarbons - Motor Oil (EPA Method 8015M)

